

**What is claimed is:**

**[Claim 1]** 1. A polarimeter comprising:

a sequential arrangement of an LED light source, a first polarizer, a  $\frac{1}{4}$  wave plate, and a second polarizer substantially aligned along a central axis; the orientation of the first polarizer to the  $\frac{1}{4}$  wave plate being fixed; and the second polarizer being rotatable about the central axis.

**[Claim 2]** 2. The polarimeter of claim 1 wherein the LED light source has an emission maximum at a wavelength from about 510 nm to about 540 nm.

**[Claim 3]** 3. The polarimeter of claim 1 wherein the LED light source is comprised of multiple LEDs arranged to provide an even illumination field.

**[Claim 4]** 4. The polarimeter of claim 2 wherein the LED light source emits at 528 nm.

**[Claim 5]** 5. The polarimeter of claim 1 wherein the first polarizer comprises a polarizing film.

**[Claim 6]** 6. The polarimeter of claim 1 wherein the second polarizer and the  $\frac{1}{4}$  wave plate are moveable along the central axis.

**[Claim 7]** 7. The polarimeter of claim 7 wherein the second polarizer has indicia for determining the degree of rotation.

**[Claim 8]** 8. The polarimeter of claim 5 wherein the polarizing film has an extinction ratio of about 10,000:1 or greater.

**[Claim 9]** 9. The polarimeter of claim 8 wherein the LED light source has an emission maximum at a wavelength from about 510 nm to about 540 nm.

**[Claim 10]** 10. The polarimeter of claim 9 wherein the LED light source is comprised of multiple LEDs arranged to provide an even illumination field.